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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,455	05/05/2006	Ole-Jacob Siljan	2005_1460A	5453
513 7590 03/27/2008 WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021				
EXAMINER BELL, BRUCE F				
ART UNIT 1795		PAPER NUMBER		
MAIL DATE 03/27/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/549,455

**Applicant(s)**

SILJAN, OLE-JACOB

**Examiner**

Bruce F. Bell

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CI/CD)  
Paper No(s)/Mail Date 9/14/05

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## **DETAILED ACTION**

### ***Specification***

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

1. The disclosure is objected to because of the following informalities:

Applicant is requested to add the title "BRIEF DESCRIPTION OF THE DRAWINGS" at page 4, line 29 and move the "DETAILED DESCRIPTION OF THE INVENTION" to page 6, prior to line 1.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 15-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 is vague and indefinite with respect to what the arrangement is from the instant claims as set forth, since it appears that the arrangement from the instant claim is just structural elements that are ducts that allow flow of medium through them. It appears that applicants are attempting to claim an arrangement assembly wherein these ducts are inside of the cell lining, however, the instant claim as set forth is for an arrangement of structural elements and therefore, it does not appear that where these

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structural elements are placed changes the arrangement of these ducts. Claims 16-28 are dependent on claim 15 and therefore have the same deficiencies.

***Claim Objections***

4. Claims 17-21, 24-26 and 28 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 19-21, 24-26 and 28 are directed to how energy is recovered, the electrolysis cell, and how the structural elements are formed, which do not recite structural limitations which further limit the arrangement of the structural elements of the ducts. An apparatus claim must rely on features and not methods of using or making or features of other devices which are not a part of the structure being instantly claimed.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Holmen (WO 87/00211).

Holmen discloses an arrangement of cooling chambers that are adapted to receive a through flow of a cooling medium which is controlled individually for each

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cooling chamber. See abstract. Pipes are used for the conveyance of the cooling medium.

The prior art of Holmen anticipates the applicants instant invention as set forth since a system of piping is used to deliver cooling medium to the cooling chambers and therefore, the arrangement is taught. The use of pipes, sets forth that the interior would be smooth, since it is well known in the art of plumbing that piping is typically smooth to allow better flow of the fluid medium through the pipes. Therefore, the piping of the Holmen document would inherently have a smooth interior, absent evidences to the contrary.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 22, 23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmen (WO 87/00211 in combination with Eucker et al (5057001) and Kotzlowski et al (5023043).

Holmen is as disclosed above in the 35 USC 102(e) rejection.

Holmen does not disclose that the arrangements structural elements are made of a ceramic or that the structural elements have sleeves and/or transitions for connection to an outer circuit.

Eucker et al disclose ceramic tubes that are used in heat exchangers where corrosive liquids or gases are handled, in high temperature applications such as those of electrolytic cells. The ceramic tubes are made of ceramic materials such as those of sintered alpha silicon carbide, sintered aluminum oxide, sintered zirconia and various others. The ceramic tubes are manufactured in a variety of diameters and wall thicknesses and some are manufactured with longitudinal internal fins for enhanced surface area. See col. 1, lines 11-21.

Kotzlowski et al sets forth an actively cooled device that includes elements of heat resistant material wherein a cooling pipe conducting coolant is brazed directly and with surface contact. This makes a more durable connection of the elements with the cooling pipe or pipes. See abstract. The heat resistant materials of carbides such as SiC, TiC, B<sub>4</sub>C, and TiB<sub>2</sub>, sintered ceramics, metal ceramic composite substances and certain metals such as Be may be used. See col. 2, lines 38-62.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time of the instant invention because even though the prior art of Holmen does not disclose ceramic materials to be used for the coolant structures, the prior art of Eucker et al and Kotzlowski et al show that ceramic materials are known in the art to be used in such coolant structures since they can withstand the heat and are resistance to chemical attack by fluids. Therefore, one having ordinary skill in the art would be motivated to use such materials in the Holmen device to better protect the structural elements from the corrosiveness of the coolant material being used and to enable the coolant structures to resist attack by the higher temperature environment in

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which they are to be used. Therefore, the prior art of Holmen in combination with Eucker et al and Kotzowski et al render the applicants instant claims obvious for the reasons set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BFB  
March 24, 2008

/Bruce F. Bell/  
Primary Examiner, Art Unit 1795